

## REMARKS/ARGUMENTS

This paper is being provided in response to the March 18, 2004 Office Action for the above-referenced application. In this response, Applicant has added new Claims 29-31, and amended Claims 1, 21, and 22 in order to clarify that which Applicant deems to be the claimed invention. Applicant respectfully submits that the new claims and the amendments to the claims are all supported by the originally filed application.

In response to the objection to the specification, Applicant submits herewith a substitute specification which includes more readable print. Applicant respectfully submits that the substitute specification introduces no new matter and is merely a more readable version of the originally filed specification. In view of the foregoing, Applicant respectfully requests that the objection be reconsidered and withdrawn.

The rejection of Claims 1-3 and 12-19 under 35 U.S.C. § 102(e) as being anticipated by Cho et al. (U.S. Patent No. 6,674,250 B2, hereinafter referred to as “Cho”) is hereby traversed and reconsideration thereof is respectfully requested. Applicant respectfully submits that Claims 1-3 and 12-19, as amended herein, are patentable over the cited reference.

Applicant's Claim 1, as amended herein, recites a fluorescent lamp including a first substrate, a second substrate which is arranged so as to face the first substrate, a discharge gas which is sealed between the first substrate and the second substrate, and a plurality of discharge electrodes having discharge projections which are arranged on the first substrate and/or the second substrate. The fluorescent lamp emits light by causing electric discharge in different

areas alternated in accordance with the discharge projections and voltages applied to the plurality of discharge electrodes. Claims 2-3 and 12-19 depend from Claim 1.

Cho relates to a fluorescent lamp with external electrodes and a backlight luminaire, and more particularly to a backlight including an external fluorescent lamp in which the external electrodes are installed at both ends of the fluorescent lamp. (Col. 1, Lines 17-21). Cho discloses a backlight source that includes edge backlight sources (Figure 2) and direct light arrangements (Figures 3 and 4). Cho discloses a backlight source including an upper substrate, a lower substrate, external electrode fluorescent lamps installed at a predetermined interval above the lower substrate, electrodes formed at the corresponding outer surfaces on both sides of the assembled upper and lower substrates, respectively, and connected to the electrode connecting lines to which an alternating current type power source is applied, a switching inverter, and a discharge gas injected into the inner space upon sealing the upper and lower substrates. (Col. 5, Lines 17-35; Col 10, Line 20-Col 11. Line 1; Figures 6a-b). Each of the fluorescent lamps includes a glass tube into which a discharge gas is injected. Each lamp includes external electrodes formed at opposite ends of a sealed glass tube. (Col. 1, Lines 48-65; Figure 1).

Applicant's Claim 1, as amended herein, is neither disclosed nor suggested by Cho in that Cho neither discloses nor suggests ***a fluorescent lamp comprising: a first substrate; a second substrate which is arranged so as to face said first substrate; a discharge gas which is sealed between said first substrate and said second substrate; and a plurality of discharge electrodes having discharge projections which are arranged on said first substrate and/or said second substrate, wherein said fluorescent lamp emits light by causing electric discharge in different areas alternated in accordance with said discharge projections and voltages applied to said***

*plurality of discharge electrodes*, as set forth in amended Claim 1. Cho discloses a backlight arrangement that includes fluorescent lamps and electrodes formed at outer surfaces of upper and lower substrates. Cho also discloses fluorescent lamps having external electrodes. However, Cho neither discloses nor suggests any discharge electrodes included in fluorescent lamps or backlight arrangements having discharge projections. Cho also neither discloses nor suggests any use of discharge projections of discharge nodes with causing electric discharge in different areas. Accordingly, Cho neither discloses nor suggests at least the feature of *a plurality of discharge electrodes having discharge projections which are arranged on said first substrate and/or said second substrate, wherein said fluorescent lamp emits light by causing electric discharge in different areas alternated in accordance with said discharge projections and voltages applied to said plurality of discharge electrodes*, as set forth in amended Claim 1.

Applicant respectfully submits that the Office Action does not set forth a proper rejection of Claim 13 under 35 U.S.C. 102(e) because the Office Action combines teachings of Cho and Nakada (U.S. Patent 6,657,396) in connection with this rejection. Thus, Applicant will address the rejection of Claim 13 as a rejection under 103(a) in following paragraphs.

In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

The rejection of Claims 4-11 and 20-28 under 35 U.S.C. § 103(a) as being unpatentable over Cho as applied to claims 1-3 and 12-19 above, and further in view of Nakada et al. (U.S. Patent No. 6,657,396 B2, hereinafter referred to as "Nakada") is hereby traversed and reconsideration thereof is respectfully requested. Applicant respectfully submits that Claims 4-

11 and 20-28, as amended herein, are patentable over the cited references, taken separately or in combination. Note that Applicant will address Claim 13 as pointed out above in connection with this rejection.

Claims 4-11, 13 and 20 depend from Claim 1. For reasons set forth below, Applicant respectfully submits that combining Nakada with Cho also does not disclose or suggest amended Claim 1, or Claims 4-11, 13 and 20 that depend therefrom.

Claim 21, as amended herein, recites a method of emitting light from a lamp (back light) in which a discharge gas is sealed, and first and second discharge electrodes are formed. Electric discharge is caused in first discharge areas between the first and second discharge electrodes in accordance with discharge projections of the first discharge electrodes by applying a voltage having a negative polarity to the first discharge electrodes and a voltage having a positive polarity to the second discharge electrodes, and converting ultraviolet rays caused by the electric discharge into visible light through a phosphor. Electric discharge is caused in second discharge areas which are different from the first discharge areas at least partially and which are between the first and second discharge electrodes in accordance with discharge projections of the second discharge electrodes by applying a voltage having a positive polarity to the first discharge electrodes and a voltage having a negative polarity to the second discharge electrodes, and converting ultraviolet rays caused by the electric discharge into visible light through the phosphor. The causing electric discharge in the first discharge areas and the causing electric discharge in the second discharge areas are controlled so as to be repeated. Claims 23, 25, and 27 depend from Claim 21.

Claim 22, as amended herein, recites a method of emitting light from a lamp (back light) in which a discharge gas is sealed, and first discharge electrodes, second discharge electrodes, and third discharge electrodes are formed. An electric discharge is caused in first discharge areas between the first and second discharge electrodes in accordance with discharge projections of the second discharge electrodes by applying a drive voltage of a positive potential to one of the first and second discharge electrodes and a drive voltage of a negative potential to the other of the first and second discharge electrodes, and converting ultraviolet rays caused by the electric discharge into visible light through a phosphor. Electric discharge is caused in second discharge areas which are different from the first discharge areas at least partially and which are between the first and third discharge electrodes in accordance with discharge projections of the third discharge electrodes by applying a drive voltage of a positive potential to one of the first and third discharge electrodes and a drive voltage of a negative potential to the other of the first and third discharge electrodes, and converting ultraviolet rays caused by the electric discharge into visible light via the phosphor. The causing electric discharge in the first discharge areas and the causing electric discharge in the second discharge areas are controlled so as to be repeated. Claims 24, 26 and 28 depend from Claim 22.

Cho is discussed above.

Nakada relates to an alternating current driven type plasma display device having a characteristic feature in a dielectric material layer and a method for the production thereof. (Col. 1, Lines 8-11). Nakada discloses a first panel 10 that includes a plurality of pairs of sustain electrodes 12 extending in a first direction with bus electrodes 13 formed along edge portions of the sustain electrodes 12. (Col. 23, Lines 11-24; Figure 1). A second panel 20 includes address

electrodes 22 extending in a second direction crossing the first direction at right angles. (Col. 1, Lines 54-60). The plasma display device is assembled using a frit glass layer formed on a portion of the second panel and then bonding the first and second panels to each other. The space formed between the first and second panels is vacuumed and then charged with a Ne-Xe mixed gas. (Col 24, Lines 9-16).

Applicant's Claim 1, as amended herein, is neither disclosed nor suggested by the references, taken separately or in combination, in that the references neither disclose nor suggest *a fluorescent lamp comprising: a first substrate; a second substrate which is arranged so as to face said first substrate; a discharge gas which is sealed between said first substrate and said second substrate; and a plurality of discharge electrodes having discharge projections which are arranged on said first substrate and/or said second substrate, wherein said fluorescent lamp emits light by causing electric discharge in different areas alternated in accordance with said discharge projections and voltages applied to said plurality of discharge electrodes*, as set forth in amended Claim 1. For reasons set forth above, Cho neither discloses nor suggests at least the feature of *a plurality of discharge electrodes having discharge projections which are arranged on said first substrate and/or said second substrate, wherein said fluorescent lamp emits light by causing electric discharge in different areas alternated in accordance with said discharge projections and voltages applied to said plurality of discharge electrodes*, as set forth in amended Claim 1. Nakada appears silent regarding any disclosure or suggestion of discharge electrodes with discharge projections and thus does not overcome the deficiencies of Cho with respect to Applicant's Claim 1. Accordingly, the references do not disclose or suggest at least the feature of *a plurality of discharge electrodes having discharge projections which are arranged on said first substrate and/or said second substrate, wherein said fluorescent lamp emits light*

*by causing electric discharge in different areas alternated in accordance with said discharge projections and voltages applied to said plurality of discharge electrodes, as set forth in amended Claim 1.*

For reasons similar to those set forth regarding amended Claim 1, Applicant's amended Claim 21 is also neither disclosed nor suggested by the references, taken separately or in combination, in that the references do not disclose or suggest *a method of emitting light from a lamp (back light) in which a discharge gas is sealed, and first and second discharge electrodes are formed, said method comprising: causing electric discharge in first discharge areas between the first and second discharge electrodes in accordance with discharge projections of said first discharge electrodes by applying a voltage having a negative polarity to the first discharge electrodes and a voltage having a positive polarity to the second discharge electrodes, and converting ultraviolet rays caused by the electric discharge into visible light through a phosphor; causing electric discharge in second discharge areas which are different from the first discharge areas at least partially and which are between the first and second discharge electrodes in accordance with discharge projections of said second discharge electrodes by applying a voltage having a positive polarity to the first discharge electrodes and a voltage having a negative polarity to the second discharge electrodes, and converting ultraviolet rays caused by the electric discharge into visible light through the phosphor; and controlling said causing electric discharge in the first discharge areas and said causing electric discharge in the second discharge areas to be repeated, as set forth in amended Claim 21.*

For reasons similar to those set forth regarding amended Claim 1, Applicant's amended Claim 22 is also neither disclosed nor suggested by the references, taken separately or in combination, in that the references do not disclose or suggest *a method of emitting light from a lamp (back light) in which a discharge gas is sealed, and first discharge electrodes, second discharge electrodes, and third discharge electrodes are formed, said method comprising: causing electric discharge in first discharge areas between the first and second discharge electrodes in accordance with discharge projections of said second discharge electrodes by applying a drive voltage of a positive potential to one of the first and second discharge electrodes and a drive voltage of a negative potential to the other of the first and second discharge electrodes, and converting ultraviolet rays caused by the electric discharge into visible light through a phosphor; causing electric discharge in second discharge areas which are different from the first discharge areas at least partially and which are between the first and third discharge electrodes in accordance with discharge projections of said third discharge electrodes by applying a drive voltage of a positive potential to one of the first and third discharge electrodes and a drive voltage of a negative potential to the other of the first and third discharge electrodes, and converting ultraviolet rays caused by the electric discharge into visible light via the phosphor; and controlling said causing electric discharge in the first discharge areas and said causing electric discharge in the second discharge areas to be repeated*, as set forth in amended Claim 22.

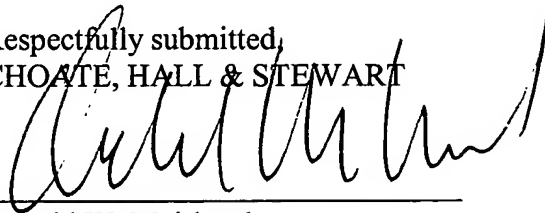
In view of the foregoing, Applicant respectfully requests that the rejection be reconsidered and withdrawn.



Applicant respectfully submits that newly added Claims 29-31 are also patentable over the cited art.

Based on the above, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-248-4038.

Respectfully submitted,  
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